

**Supplemental  
Notice of Allowability**

Application No.

09/672,675

Examiner

Neveen Abel-Jalil

Applicant(s)

THOMPSON, R. DONALD

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to May 17, 2004.
2. ☒ The allowed claim(s) is/are 1-14, 24-27 and 29-46.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All b) ☐ Some\* c) ☐ None of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.


Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material

5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

  
Neveen Abel-Jalil  
AU 2165

**DETAILED ACTION**

***Remarks***

1. The attached Supplemental Examiner's amendment is to correct 35 USC 101 issues raised by the office. Claims 1-14, 24-27, and 29-46 ~~are~~ remain pending

***EXAMINER'S AMENDMENT***

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Clint Feekes (Attorney of Record) on January 3, 2007.

3. The application has been amended as follows:

**Amendments the claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listings of Claims:**

Claim 1: (Original) A method in the computer system for correlating a subset of attributes to one or more payloads, the method comprising:

obtaining a request for payload corresponding to a subset of client attributes;

obtaining one or more payloads, wherein each payload defines a condition statement for delivering the payload;

correlating the condition statement into a catalog, wherein the catalog includes an attribute list, an evaluator list, a value list and a payload list;

traversing the catalog to determine one or more payloads corresponding to the subset of client attributes; and

returning the one or more payloads.

Claim 2: (Original) The method as recited in Claim 1, wherein the step of correlating the condition statement into a catalog includes:

generating an expression tree corresponding to the condition statement;

mapping the expression tree into an evaluation tree; and

mapping the evaluation tree into the catalog.

Claim 3: (Original) The method as recited in Claim 2 further comprising optimizing the expression tree prior to mapping the expression tree into an evaluation tree.

Claim 4: (Original) The method as recited in Claim 3, wherein the step of optimizing the expression tree includes:

organizing the expression tree such that an attribute evaluator value expression is a leaf node and a connector is a tree node;

scoring any tree nodes, wherein a disjunctive tree node score equals the sum of its subtree, wherein a conjunctive tree node score equals the product of its subtree, and wherein each leaf node score equals one; and

for each level of the expression tree, organizing the nodes such that a right-most node has the highest score.

Claim 5: (Original) The method as recited in Claim 2, wherein the step of mapping the expression tree into an evaluation tree includes:

- placing a lowest scoring leaf node as a topmost node of the evaluation tree;
- placing conjunctive operations as right tree nodes;
- placing disjunctive operations as left tree nodes; and
- traversing the expression tree until each leaf node within the expression tree is mapped into the evaluation tree.

Claim 6: (Original) The method as recited in Claim 2, wherein the step of mapping the expression tree into the catalog includes:

- storing a first attribute in the attribute list;
- storing one or more evaluators corresponding to the first attribute in the evaluator list;
- storing one or more values corresponding to each of the first attribute evaluators in a value list;
- if any conjunctions exist, storing one or more identifiers of attribute evaluation value pairs corresponding to the first attribute value; and

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if any payloads exist, storing one or more payloads corresponding to the first attribute value.

Claim 7: (Original) The method as recited in Claim 6 further comprising repeating the steps of storing data in the attribute list, the evaluator list, the conjunction list, and the value list for any conjunction listed in the first attribute conjunction list.

Claim 8: (Original) The method as recited in Claim 6 further comprising repeating the steps of storing data in the attribute list, the evaluator list, the conjunction list, and the value list for a second attribute in the evaluation tree.

Claim 9: (Original) The method as recited in Claim 6 further comprising repeating the steps of storing data in the attribute list, the evaluator list, the conjunction list, and the value list for attribute evaluator value pairs identified the first attribute conjunction list, wherein the step of storing data in an attribute list is done on a separate catalog data structure.

Claim 10: (Original) The method as recited in Claim 6, wherein the attribute list is a master attribute list having a size less than all the possible attributes.

Claim 11: (Previously amended) The method as recited in Claim 1, wherein the step traversing the catalog to determine one or more payloads corresponding to the subset of client attributes includes;

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obtaining a first attribute from the subset of client attributes;

if the first attribute is found in the attribute list, obtaining an evaluator from the evaluator list and a value from the value list, wherein the evaluator and value form an evaluator/value set;

if the first attribute satisfies the evaluator/value set, determining whether a conjunction and a payload exist;

if a conjunction exists, repeating the steps with a corresponding attribute identified in the conjunction; and

if a payload exists, adding the payload to a master payload list.

Claim 12: (Original) The method as recited in Claim 11 further comprising repeating the steps until the last evaluator in the first attribute evaluation list is examined.

Claim 13: (Original) The method as recited in Claim 12, wherein the repeating step is done on a separate catalog data structure.

Claim 14: (Original) The method as recited in Claim 1, wherein the payload set is advertisement media and wherein the client attributes are client profile data attributes.

Claims 15-23: (Canceled)

Claim 24: (Currently Amended) A computer-readable storage medium having computer-executable modules for correlating payloads with a condition statement for delivering the payload, the modules ~~or~~ comprising:

- a master attribute module ~~for~~ storing a list of attributes;
- an evaluator module, dynamically linked to the attribute module, and containing evaluators corresponding to each attribute in the attribute list;
- a value module, dynamically linked to the evaluator module, and containing values corresponding to each evaluator in the evaluation module;
- a payload module, dynamically linked to the value module, and containing payload sets corresponding to each value in the value module, wherein the payload module ~~may be~~ is empty;
- and
- a conjunction module dynamically linked to the value module and containing conjunction sets corresponding to each value in the value module, wherein the conjunction list ~~may be~~ is empty.

Claim 25: (Currently Amended) The computer-readable storage medium as recited in Claim 24 further comprising one or more attribute modules ~~for storing~~ to store additional attributes.

Claim 26: (Currently Amended) The computer-readable storage medium as recited in Claim 25, wherein the master attribute module list contains less than all the possible attributes.

Claim 27: (Currently Amended) The computer-readable storage medium as recited in Claim 25, wherein the payload set is advertisement content and when the attributes are client profile data attributes.

Claim 28: (Canceled)

Claim 29: (Currently Amended) A computer-readable storage medium containing computer-readable instructions ~~which when executed~~ executable to perform a method in a computer system for correlating a subset of attributes to one or more payloads, the method comprising:

- obtaining a request for payload corresponding to a subset of client attributes;
- obtaining one or more payloads, wherein each payload defines a condition statement for delivering the payload;
- correlating the condition statement into a catalog, wherein the catalog includes an attribute list, an evaluator list, a value list, and a payload list:
- traversing the catalog to determine one or more payloads corresponding to the subset of client attributes; and
- returning the one or more payloads.

Claim 30: (Currently Amended) ~~A~~ The computer-readable storage medium as recited in Claim 29, wherein the step of correlating the condition statement into a catalog includes:

- generating an expression tree corresponding to the condition statement;



mapping the expression tree into an evaluation tree; and  
mapping the evaluation tree into the catalog.

Claim 31: (Currently Amended) A The computer-readable storage medium as recited in Claim 30 further comprising optimizing the expression tree prior to mapping the expression tree into an evaluation tree.

Claim 32: (Currently Amended) A The computer-readable storage medium as recited in Claim 31, wherein the step of optimizing the expression tree includes:

organizing the expression tree such that an attribute evaluator value expression is a leaf node and a connector is a tree node;

scoring any tree nodes, wherein a disjunctive tree node score equals the sum of its subtree, wherein a conjunctive tree node score equals the product of its subtree, and wherein each leaf node score equals one; and

for each level of the expression tree, organizing the nodes such that a rightmost node has the highest score.

Claim 33: (Currently Amended) A The computer-readable storage medium as recited in Claim 30, wherein the step of mapping the expression tree into an evaluation tree includes:

placing a lowest scoring leaf node as a topmost node of the evaluation tree;

placing conjunctive operations as right tree nodes;

placing disjunctive operations as left tree nodes; and

traversing the expression tree until each leaf node within the expression tree is mapped into the evaluation tree.

Claim 34: (Currently Amended) A The computer-readable storage medium as recited in Claim 30, wherein the step of mapping the expression tree into the catalog includes:

- storing a first attribute in the attribute list;
- storing one or more evaluators corresponding to the first attribute in the evaluator list;
- storing one or more values corresponding to each of the first attribute evaluators in a value list;
- if any conjunctions exist, storing one or more identifiers of attribute evaluation value pairs corresponding to the first attribute value; and
- if any payloads exist, storing one or more payloads corresponding to the first attribute value.

Claim 35: (Currently Amended) A The computer-readable storage medium as recited in Claim 34 further comprising repeating the steps of storing data in the attribute list, the evaluator list, the conjunction list, and the value list for any conjunction listed in the first attribute conjunction list.

Claim 36. (Currently Amended) A The computer-readable storage medium as recited in Claim 34 further comprising repeating the steps of storing data in the attribute list, the evaluator list, the conjunction list, and the value list for a second attribute in the evaluation tree.

Claim 37: (Currently Amended) A The computer-readable storage medium as recited in Claim 34 further comprising repeating the steps of storing data in the attribute list, the evaluator list, the conjunction list, and the value list for attribute evaluator value pairs identified in the first attribute conjunction list, wherein the step of storing data in an attribute list is done on a separate catalog data structure.

Claim 38: (Currently Amended) A The computer-readable storage medium as recited in Claim 34, wherein the attribute list is a master attribute list having a size less than all the possible attributes.

Claim 39: (Currently Amended) A The computer-readable storage medium as recited in Claim 29, wherein the step traversing the catalog to determine one or more payloads corresponding to the subset of client attributes includes:

- obtaining a first attribute from the subset of client attributes;
- if the first attribute is found in the attribute list, obtaining an evaluator from the evaluator list and a value from the value list, wherein the evaluator and value form an evaluator/value set;
- if the first attribute satisfies the evaluator/value set, determining whether a conjunction and a payload exist;
- if a conjunction exists, repeating the steps with a corresponding attribute identified in the conjunction; and
- if a payload exists, adding the payload to a master payload list.

Claim 40: (Currently Amended) A The computer-readable storage medium as recited in Claim 39 further comprising repeating the steps until the last evaluator in the first attribute evaluation list is examined.

Claim 41: (Currently Amended) A The computer-readable storage medium as recited in Claim 40, wherein the repeating step is done on a separate catalog data structure.

Claim 42: (Currently Amended) A The computer-readable storage medium as recited in Claim 29, wherein the payload set is advertisement media and wherein the client attributes are client profile data attributes.

Claim 43: (Currently Amended) A ~~communication medium~~ computing device having computer-executable modules ~~for correlating~~ being executable by a computer to correlate payloads with a condition statement for delivering the payload, the modules comprising:

- a master attribute module ~~for~~ storing a list of attributes;
- an evaluator module, dynamically linked to the attribute module, and containing evaluators corresponding to each attribute in the attribute list;
- a value module, dynamically linked to the evaluator module, and containing values corresponding to each evaluator in the evaluation module;
- a payload module, dynamically linked to the value module, and containing payload sets corresponding to each value in the value module, wherein the payload module ~~may be~~ is empty;

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and

a conjunction module dynamically linked to the value module and containing conjunction sets corresponding to each value in the value module, wherein the conjunction list ~~may be~~ is empty:

Claim 44: (Currently Amended) The ~~communication medium~~ computing device as recited in Claim 43 further comprising one or more attribute modules ~~for storing~~ to store additional attributes.

Claim 45: (Currently Amended) The ~~communication medium~~ computing device as recited in Claim 44, wherein the master attribute module list contains less than all the possible attributes.

Claim 46: (Currently Amended) The ~~communication medium~~ computing device as recited in Claim 45, wherein the payload set is advertisement content and when the attributes are client profile data attributes.

Claims 47-48: (Canceled)

***Reasons for Allowance***

4. Claims 1-14, 24-27, and 29-46 are allowed over the prior art made of record.

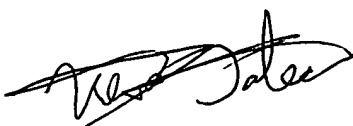
Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### *Conclusion*

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Neveen Abel-Jalil whose telephone number is 571-272-4074. The examiner can normally be reached on 8:30AM-5:30PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey A. Gaffin can be reached on 571-272-4146. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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